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THE PLANT DISEASE REPORTER

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The Plant Disease Survey

Volume VIII Number 4

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BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

THE PLANT DISEASE REPORTER

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THE PLANT DISEASE SURVEY

Vol. VIII August 1, 1924 Number 4

CLASSIFICATION OF MAILING LIST FOR PLANT DISEASE REPORTER AND SUPPLEMENTS, AUGUST 1, 1924.

Pathologists	258	Scientific Assistant	8
Botanists	70	Agrostologist	1
Horticulturists	38	Bacteriologists	1
Inspectors	34	Editors	5
Entomologists	21	Foresters	2
Administrative Chief	20	County Agents	10
Biologists	9	Libraries	56
Agronomists	8	Commercial concerns	32
Mycologists	6	Unclassified (Misc.)	21
Agriculturists	5	Foreign	72
Physiologists	5	Total	682

STEM RUST OF WHEAT

Kentucky: A small plot of spring wheat which is just ripening is quite heavily infected with black stem rust. None was observed in the winter wheat. The presence of the rust is difficult to explain as none at all was found on the farm last season except very early in the spring and this was the form on timothy. (Valleau) July 15)

Illinois: At the present time there is a light infection of stem rust in practically all the counties in Illinois. On July 11 several fields of wheat were examined in Bureau, LaSalle and Tazewell Counties and a light infection of stem rust was found. All these infections were spotted, and in some fields the rust was found only after careful search. The wheat will be cut in a few days and no damage will be done by the stem rust. (Curran, July 15)

North Dakota: Winter wheat - First date of appearance of stem rust on winter wheat this year was July 3 at Fargo and July 15 at Dickinson. Since July 3, the infection has spread somewhat more quickly on plants of winter wheat under observation at Fargo than the corresponding infection of stem rust on spring wheats.

Spring wheat - The season has been very backward, and although much wheat was sown fully a month earlier than usual, cold and dry

spring weather prevented germination and further early development very greatly. Wheat is about a week later in development than usual at this time of year. In Cass County, wheat headed generally during the first week in July. In the northeastern and southwestern sections of the state, it headed during the second week in July. Stem rust was observed on spring wheat in the Uniform Rust Nursery at Fargo for the first time on July 8, although it had been looked for previously. The amount of infection was very light - about one pustule per rod row.

Infection has not spread very much since first observed. Fields of wheat are generally very sparsely infected.

First dates of appearance of P. graminis on spring wheat at Fargo - in Uniform Rust Nursery.

1919 - June 6	1922 - June 26	
1920 - June 22	1923 - June 29	
1921 - June 13	1924 - July 8	(Weniger, July 15)

South Dakota: There is a general sprinkling of black stem rust all over South Dakota. A general area of 5 to 10% infection in Spink and Brown Counties may do a little damage but we do not look for more than a very slight loss. There is a small area of about 30% infection in southeastern South Dakota but it will probably do little damage as the wheat is being cut. (Evans, July 24)

BUNT OF WHEAT

Arkansas and Nebraska report very little damage to winter wheat from this disease, and in California there was only 1/10 percent on spring wheat, according to Mackie. The following reports indicate some damage in a number of states.

Pennsylvania: This smut was found to be very much more common than expected. Leaving out of the count fields planted with Forward wheat (just brought into Pennsylvania from New York) it was found that 45% of all the fields surveyed were infected with bunt, the average infection being 1.1%. The maximum infection of bunt found in any one field in the counties is as follows:

Lancaster County -	one	wheat	field	had	12.7% bunt
Blair County -	"	"	"	"	9. % "
Cumberland County -	"	"	"	"	4.3% "
Lycoming County -	"	"	"	"	4. % "
Chester County -	"	"	"	"	1.7% "

(Kirby, July 15)

Illinois: Over the state generally this disease, although still severe, is noticeably less disastrous than last year or the year before. It was first found June 18 in Marion County in a 30 acre field of Fulcaster wheat. The infection ranged around 5%. With the exception of a single instance of 25% infection in McLean County, the bunt infested fields examined have shown percentages generally lower than 5% and often around 1%. (Tehon, July 15)

Colorado: Very general over the eastern part of the state. Mr. E. A. Ludgren reported as high as 5% loss in some fields in the northeast section. It is general in the Fort Collins and Greeley sections. (Learn, July 15)

Washington: The harvest of wheat has already begun in this state, and at first the farmers expected not over 60% of a crop, but after harvest operations have revealed at least a 75% crop. Smut, however, is the worst. Some experimental plots conducted by the Department of Farm Crops and the Department of Plant Pathology averaged about 35% smut. Last Saturday field counts were made around Pullman, and the percentages of smut ranged from 30 up to 65%.

One interesting experiment might be called to your attention. Mr. H. H. Curtis last year, under the direction of Dr. Heald, replowed some of his summer fallow and then planted wheat. We find that there is less than 8% smut on the wheat on plowed summer fallow, while fields right next to it on unplowed summer fallow had 35% smut. (Zundel, July 21)

LOOSE SMUT OF WHEAT IMPORTANT IN NORTH DAKOTA AND NEBRASKA

North Dakota: Loose smut appears to be as abundant this year as last year. In many fields of Kota, infection of 5 to 10% has been found. Marquis wheat shows more than last year, and Monad about the same as last year. The past two seasons have developed more loose smut than occurred since 1918. First date of appearance at Fargo about July 1, and general about July 8. Fully ten days later in making its appearance than last year.

The hot water treatment has not been used in the state, but will need to be advocated to prevent future losses. (Weniger, July 15)

Nebraska: Much more prevalent than previous reports. Some fields showing 15-20% of heads infected. Practically all fields show some, averaging from trace to 5%

More prevalent than bunt, probably due to favorable weather conditions for infection. (Goss, July 15)

SLIGHT DAMAGE FROM LEAF RUST OF WHEAT

Reports received from collaborators in a number of states indicate that while leaf rust is rather general in distribution, it is causing only slight injury.

Arkansas: Much less important than usual. Appeared very late, after heads were well out and did little damage. Observations during winter and spring failed to reveal even a trace. Late appearance seems to be correlated with late cool spring. (Young, July 1)

Illinois: As a result of the light early infection, which undoubtedly was influenced by late planting last fall and a severe winter, leaf rust, although the most conspicuous and most severe of wheat diseases this season, has continued less abundant than usual. While it is prevalent everywhere, it does not compare in abundance with the epiphytotic seasons of 1921 and 1922, nor even with the milder rust season of 1923. Practically 100% of the culms are diseased; but the leaf surface involved by pustules seldom runs over 50% while it averages between 15 and 20%.

As usual, Turkey wheats are much less severely rusted than the soft wheats. So far as could be observed, there was no appreciable difference in the amount of infection on the soft wheats such as Fultz, Fulcaster, Red Cross, Columbia, etc. (Tehon, July 15)

North Dakota: Leaf rust is not abundant this year, even on the most susceptible varieties. First date of appearance was about July 1, and is now not very far along, although it can be found on nearly all leaves of susceptible varieties. Leaf rust is very late in development as compared with previous years and as compared with the stage of development of the wheat. (Weniger, July 15)

SEPTORIA TRITICI IN ILLINOIS

"Second only to leaf rust in conspicuousness, this disease has appeared in all parts of the state in rather more than its usual abundance. It was the earliest appearing disease, being present in considerable quantities early in June. By June 6, Fultz wheat in southwestern Illinois was infected to the extent that 30% of the plants were diseased. The infection appeared at first only on the lower leaves of the wheat plants, and was heavy. As the season advanced, the infection spread more generally through the fields and over the plants until, at harvest, the finding of an uninfected culm is rare indeed.

"Among the wheat varieties, Fultz, Columbia, and a variety reported under the name of "Orange" appeared most severely diseased, with Fulcaster only slightly less so. The resistance shown by Red Cross is more marked this season than usual. The turkey wheats have been uniformly but lightly infected." (Tehon, July 15)

WHEAT SCAB

Delaware, Maryland, and Illinois report unusual abundance of wheat scab this year, although in Illinois it is less serious than during 1923. In Maryland one field was reported with 90% of the heads affected. The disease has also been reported from New Jersey; and from Michigan and Nebraska as causing only slight damage.

AN UNUSUAL TROUBLE OF WHEAT REPORTED FROM ILLINOIS

The following interesting report of the dying of wheat plants caused by Marasmius scorodonius Fr. has been received from L. R. Tehon of Illinois. This is the only report of this trouble that has been received by the Survey.

"An unusual condition observed this season is the death of wheat plants, caused by the attack of the tiny mushroom Marasmius scorodonius Fr. In a wheat field examined in Knox County, many plants were being attacked, stunted, and killed; and the sporophores of the tiny mushroom were protruding in numbers from the basal internodes of the culms. Among 39 plants counted in one instance 22 were diseased; and, in another instance, among 100 plants counted 41 were diseased.

"During three seasons of observation in Illinois this condition, -- the sporophores of Marasmius growing directly out of the lower internodes of wheat culms, -- has been observed five times."

POWDERY MILDEW ON WHEAT AND RYE IN ILLINOIS

"Powdery mildew on wheat has been more abundant, and more prevalent in Illinois this season than ever before. Hitherto it had been found only in Madison County; but this season it has been found in Cass County where 20% of the plants in a forty acre field of Turkey Red were infected; in DuPage County where 100% of the plants in 1/6 acre plots of Red Cross and Turkey 10-110 were diseased, and in Lake County where a slight infection was in a twenty acre field of Turkey Red."

"In a small plot of rye near Wheaton (in northeastern Illinois) 100% of the plants were affected. On June 20, when the plot was visited, the attack of the fungus was proving disastrous to many of the rye plants.

"This is the first report of powdery mildew upon rye for Illinois; and is one of the very few reports of powdery mildew upon any of the grains." (Tehon, July 15)

LATE BLIGHT OF POTATO

Maine: In spite of unusual scarcity of late blight foliage infection last summer (Over acre of unsprayed and undusted Green Mountains having no observed injury to leaves or tubers), some tuber infection was seen this spring. (Folsom, June 15)

New York: First late blight was seen here (Riverhead, L. I.) July 5. Weather since then dry and no further development. (Clayton)

West Virginia: First case observed on July 2 in patch of potatoes on low ground. Disease was in advanced stage. (Sherwood, July 15)

North Carolina: A light infection of late blight of the potato was noted in a field in Watauga County on July 1. Other fields visited during the first week of July showed no trace. Potato seed growers are applying Bordeaux spray and dust at intervals of from one week to ten days to reduce blight as much as possible. (Fant, July 5)

South Carolina: Unimportant this year. Four local, slight to moderate attacks recorded in the trucking region of the lower part of the state. (Ludwig, July 15)

SCAB AND RHIZOCTONIA ON POTATOES IN KANSAS

The following reports were received from E. A. Stokdyk, under date of July 1:

"Digging has just started in some localities, scab is showing up with almost 100% infection. Usually we do not find infection until later in the season. It is confined mostly to old fields. One field will be a total loss. It is due, no doubt, to our seasonal conditions. A dry spell when potatoes were half formed caught them in the critical stage.

"Rhizoctonia solani is perhaps the most severe for several years. Treated plots show from 10 to 20% infection while untreated show from 80 to 100% infection. This year we find purple colored tops and more tubers setting in the stem, as a result of Rhizoctonia than usual."

POTATO MOSAIC UNUSUALLY PREVALENT IN WISCONSIN

"More than for several years. Triumph heavily infected. Best fields show 5 to 7%. These are being rogued promptly. Our cool season has not provided any temperature masking." (Vaughan, July 15)

OUTBREAK OF THE ASCOCHYTA DISEASE OF COTTON

On July 16 the following memorandum was sent to collaborators in the cotton states:

On July 11 a specimen of cotton affected with the disease described by Elliott (Elliott, J. A. A new Ascochyta disease of cotton. Arkansas Agr. Exp. Sta. Bul. 178: 1-18, 1922) as being caused by Ascochyta gossypii Sydow was received from collaborator F. D. Fromme of Virginia. The material came from Brunswick County, Va., where the County Agent said that the disease was common. Fromme also made the statement that similar specimens were received the same day from Emporia, Virginia, which is in Greensville County, bordering Brunswick County on the east.

A statement and specimen have now just come in from collaborator G. W. Fant of North Carolina, who writes that the outbreak has been widespread in that state during the past two weeks, the disease being reported from 33 counties up to July 15. The Department of Plant Pathology at Raleigh has been flooded with inquiries and complaints. A statement by Dr. S. G. Lehman was enclosed and is reproduced herewith:

"'Cotton blight' has suddenly appeared in many cotton fields of this state and is causing no little concern among cotton growers. During the week of July 7-14 specimens of the disease or reliable descriptions of it were received from 33 of the 77 counties which grow cotton. Reports indicate that the disease is general throughout the Piedmont and northern half of the Coastal Plain sections of the state. More than 50% of the plants are infected in some fields, and in severe cases plants are completely defoliated. Plants less severely injured show recovery by the formation of new leaves and branches.

"'Cotton blight' has never before been reported in severe form in North Carolina. A serious outbreak occurred in Arkansas in 1920 and Elliott found that the disease is caused by a fungus which is believed to be Ascochyta gossypii Sydow (Univ. Ark. Agr. Exp. Sta. Bul. 178). The past four weeks has been marked by unusual rainfall

and high humidity in North Carolina and it is believed that the sudden and unusual appearance of blight is strongly correlated with this condition of the weather." (July 15)

Since this memorandum was issued, the disease has been reported from another state. Collaborator C. A. Ludwig, of South Carolina, makes the following statement under date of July 15:

"In view of the report contained in the special memorandum of July 16, it may be well to report that this disease is present in some abundance in parts of South Carolina. Up to July 8 we have no report of this disease in this state but within a day of that time we had had four reports, mostly from Lexington County, although one specimen was from Greenvile County. County Agent Addy, of Lexington County informs me that it is very prevalent in that county. County Agent Carns, of Spartanburg County thinks it present there but has not sent specimens for diagnosis. - Fungus from Lexington County has been verified by Dr. H. R. Rosen of the Arkansas Experiment Station."

TOMATO DISEASES

Leafspot (Septoria lycopersici)

Moore reports (July 15) that this disease is general in South Carolina but not severe. In Mississippi leafspot was reported July 14 from Columbus, where it was said to be rather serious locally. According to Wallace, this is the first report of the occurrence of the disease in Mississippi since 1918. Evans states (July 24) that leafspot was bad in a number of gardens observed in South Dakota. The following report sent in by R. F. Poole indicates that the disease is causing considerable trouble in New Jersey:

"The leafspot was first observed the ninth of June in Gloucester County on Earliana tomatoes. It was prevalent in many fields by the ninth of July, causing serious blighting of the lower leaves and much defoliation, although only a few tomatoes were matured. Slight infection of the Acme, Bonny Best and Greater Baltimore varieties, the latter two being grown for the canhouse, was first observed on the ninth of July." (July 12)

Southern blight (Sclerotium rolfsii)

Southern blight has been reported from Mississippi as causing slight damage in one instance observed, and from South Carolina as follows:

"Very severe. Over 50% loss in Beaufort County from this trouble. Traced to infected plants in most cases." (Moore, July 15)

CANTALOUPE BLIGHT IN MARYLAND

"Cantaloupe blight (Macrosporium cucumerinum) has already

made its appearance in the cantaloupe fields in eastern Maryland. In Anne Arundel County fields were found in which the basal leaves were already dying although the cantaloupes were only about half grown." (Jehle, July 15)

PEA DISEASES IN NEW JERSEY

W. H. Martin and C. M. Haenseler have sent in the following statement (July 12) regarding pea diseases in New Jersey:

"Root rot (Aphanomyces euteiches?) - Yields much better than last year in spite of severe root rot infection. Crop in canning section in Cumberland County best for many years even where root rot was present. In Camden and Burlington Counties a few fields a practical failure but crop good on many severely diseased soils. Worlds Record and Suttons Ideal, the two best varieties out of 40 tested on root rot soil in 1922, gave excellent yields on root rot soil this year. Continuous spring rains encouraged root rot infection but enabled plants to mature a fair crop in spite of the disease."

"Mosaic ? - An abnormal condition similar to a mosaic very serious on Little Marvel and Horsford. Much less in Alaskas, Thomas Laxton and others. First diseased plants observed before appearance of aphids but much more severe after aphids became abundant."

"Blight (Ascochyta pisi) - Severe defoliation and epidermal injury on stem. Very little on pods. General in all fields but more defoliation on light soils."

APPLE SCAB UNUSUALLY PREVALENT

Recent reports from Connecticut, New York, Delaware, West Virginia, Tennessee, Michigan, and Wisconsin, state that scab is unusually prevalent this year. Thurston reports that in Pennsylvania also the disease is general, and rather severe in most localities. In Kansas, on the other hand, infection was very late this spring, and the disease is not serious. Most orchards in that state were sprayed three times before any infection was noted, according to Stokdyk. In Minnesota, while heavily infected trees have been found in some orchards that were not sprayed, the disease is apparently rather light generally.

Connecticut: Started early and vigorously because of wet, cold, backward weather up to June. The dry weather of June has since held it somewhat in check, but on the whole it is a rather bad season. Have proved that scab carries over the winter in the twigs of such susceptible varieties as Fall Pippin, McIntosh and Greening in its Fusicladium stage and this method is as serious a menace as the asco stage on the old leaves. (Clinton, July 1)

New York: More prevalent than for many years. Period of applications for western New York conform to the following dates: Delayed Dormant April 29 - May 5; Pre-pink May 12-15 (Recommended in some counties); Pink May 21-26; Calyx June 2-5. After the delayed dormant period we had rain continuously up to May 20. Weather

conditions interfered considerably with the spraying and dusting operations. Scab may damage as much as 25% of the crop this year. Disease first apparent on foliage in western New York May 24-29.

Very prevalent in the Hudson Valley but not as destructive as in western New York. Applications conform to the following dates: Delayed Dormant April 21-24; Pre-blossom May 5-8; Calyx May 24-27. Apple scab first noted on foliage May 20 in Hudson Valley. Pre-blossom application was most important for scab control while in western New York the delayed dormant was most important. (Guba, July 1)

Delaware: An unusual severe outbreak of apple scab. Weather conditions extremely favorable for spread of disease and also a factor in preventing timely applications. Initial infection appears on the first leaves of the blossom clusters May 3. Leaf infection more generally severe than fruit infection. (Adams, July 15)

Tennessee: In eastern Tennessee scab is especially heavy on fruit this year. Usually leaf scab is rare in this state but this year it is very abundant, dwarfing and deforming the leaves. Large corky lesions common. Some defoliation, as a result, may occur. (Hesler, July 13)

Wisconsin: More abundant than usual. Unsprayed trees close to 100% badly scabbed. Best sprayed orchards will have 10 to 20% loss from this disease. (L.K.Jones, July 1)

CEDAR RUST SEVERE ON APPLES IN MARYLAND

"The worst ever. There will be more premature defoliation due to rust than at any other time during the past ten years which covers my experience in Maryland." (Temple, July 15)

FIRE BLIGHT ON APPLE

West Virginia and South Carolina report that blight is not serious on apples, and in Michigan, according to Coons, there was practically no blossom blight. Guba states (July 1) that the disease is not so prevalent in New York as it was in 1923. In Delaware, according to Adams, it is more generally severe than usual, while Stokdyk reports the worst epidemic for years in Kansas. Eighty-five percent of the blossoms were blighted on some Jonathan trees. The following report indicates that the disease is severe in Colorado also:

"Fire blight as twig and blossom blight is severe in many orchards in Delta and Montrose Counties. Twig blight was found down in the third year wood, and bacteria oozing from the branches, also one instance showed oozing from apple fruit. A fruit loss of 25% was estimated in one orchard. Twig blight was more common to young Jonathan and blossom blight to the older

Jonathans. The susceptible varieties were Jonathan, Gano, and Ben Davis. One orchard showed blight on Winesap. In the orchard with Winesap it was severe on Jonathan, but two rows of blighted Keiffer pears were on the south. The disease was general in these two counties, and has been reported as severe in one orchard in Weld County. It has not been observed about Fort Collins. The disease was observed in Delta and Montrose Counties from June 13-18. Previous to the blight there was quite a little rain for a week, followed by a hot humid condition."(Learn, July 1)

BLACK ROT OF APPLE

Connecticut: About the usual amount of foliage injury, but not serious. (Clinton, July 1)

New York: Quite prevalent in the Hudson Valley and on Long Island. In some orchards in Rockland County black rot leaf spot is serious causing defoliation in some instances. Some observations in Dutchess County showed frog-eye spots and black rot cankers closely associated, suggesting that inoculum causing the leaf-spot had its source in the cankers. (Guba, July 1)

Delaware: The leafspot has been exceptionally severe. Rot of early apples more generally severe. (Adams, July 15)

West Virginia: Leafspot is severe on old trees carrying cankered twigs, in spite of spraying. On younger trees which have been kept well pruned, the leaf spot infection is light. (Sherwood, July 1)

Arkansas: More abundant than last year. (Young, July 1)

PEACH BROWN ROT

L. M. Hutchins reports (July 18) that the Georgia peach crop was remarkably free from brown rot, with the season nearly over. The disease was rather prevalent on early peaches in South Carolina and Mississippi. Fromme states (July 12) that brown rot has appeared at Crozet, Virginia and will be an important factor this year.

RHIZOPUS ROT OF CHERRY IN WASHINGTON

"One very serious case of this kind was brought to our attention in the Snake River section of eastern Washington. A shipment of 300 fifteen pound lugs was almost a total loss from this rot (Rhizopus nigricans). Exposure of the picked fruit to high temperatures in the field and slow movement of fruit to point where refrigeration was available were contributing factors." (Dana, July 1)

CHERRY LEAFSPOT (COCCOMYCES HIEMALIS)

New York: First noted in Dutchess County in the Hudson Valley on June 5 and in Ontario County in western New York on June 17. Abundant in unsprayed orchards in Wayne County. Prevalent all over the state. Infection severe where petal fall and shuck fall applications were not applied. Likely to be serious where the necessary number of applications were not applied. (Guba, July 1)

New Jersey: Very common and severe, unsprayed trees 50-75% defoliated in many instances. In a sprayed orchard of 2500 trees receiving the regular spray schedule, 10-15% of the leaves were affected. (Martin & Haenseler, July 12)

Ohio: No cherry leaf spot has been seen until June 19, when one tree near Dayton was observed to be badly affected. Two years ago most of the cherry trees in central Ohio were yellow a week earlier than this. (Stover, June 19)

Wisconsin: An extremely small amount of leaf spot this season, there will be no loss whatever from this disease. (L.K.Jones, July 1)

DEAD ARM (CRYPTOSPORELLA VITICOLA) OF GRAPE COMMON IN NEW YORK

"Common in the Chautauqua grape belt and in the Hudson Valley. Dead arms very apparent in middle of June. Practically every vineyard in the Chautauqua grape belt has some dead arm. Loss 5%." (Guba, July 1)

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